# The Chemical Age

# Index to Volume IV. January-June, 1921.

ACIDS Manufacturing Plant, Ironac in, 121
Processes, New, 115, 352, 493 525, 530
Plant, Dawson Sulphuric: H Royal
Dawson, 15
Sulphuric, During the War Period, 421
Aerial Ropewayn, 33
Alcohol (including Power), Industrial:
Sir C. Bedford, 647
Alcohol, Industrial: James M. Doran, 72
Alizarine Production, History of, 187
Alkaloids, Subsidiary, Utilisation of, 191
Aluminium, Casting of, 191
Ammonia, Sulphate of, German Exports, 366
Ammonia Oxidation Units for Sulphuric

Ammonia, Supriate of, Jerman Exports, 366
Ammonia Oxidation Units for Sulphuric Acid Plants: W. Wyld, 150
Ammoniacal Liquor, Distillation of: W. Wyld, SS 98
Analyst, the Work of, 508
Analysts, Society of Public, 449, 558, 672
Anglo-American Oil Co.: New Assistant Superincendent, 480
Anti-Corrosive Preparations for Iron and Steel, Notes on, 367
Argentina, Chemicals in, 157, 431
Artillery College: New Professor of Chemistry, 700

Authors—

Benn, E. J. P., 45, 77, 126, 182, 279, 366, 400, 451, 716

Byth, H. Discharge of Material in Bulk from Railway Wayons, 41

Berth, C. W. The Economical Upkeep of Chemical Plant and Machinery, 719

Broadbert, F. J.: The Driving of Contrifuges, 183

Bush, H. J.: Electrostatic Precipitation Applied to Blast Furnace Gases, 110

DORAN, J. M.: Industrial Alcohol, 72

Fryer, P. J.:

Recent Developments in Soft-Soap Manufacture, 609

The Refractometer in Scientific and Technical Work, 213

Substitutes for Linseed Oil in the Paint Industry, 496

Ganner, F. H.: The Carbonisation of Lubricating Oils, 96

Hearth, R. F.: Fourth Dimension and Some Conceptions of Matter, 14

Jones, G. B.:

Materials of Construction Used in a Chemical Works, 394, 416

Preservation of Chemical Works Plant and Structures, 494

Kingzett, C. T.: Early Chemistry in Oxford, 529

Koekkoek, P. R.: Preparation and Use of Modern Varnishes, 499

Marthels, A. R.: Insulating Varnishes, 50m Notes, 501

Maxted, R. S.: Chemistry of Paints and Varnishes, 28

Morrell, R. S.: Chemistry of Paints and Varnishes, 28

Morrishes, 490

Martishes, 497

Martishes, 49

Use of Modern Varnishes, 499
MATTHIS, A. R.: Insulating Varnishes, Some Notes, 501
MACTED, E. B.: Nitrogen Industry in 1920, 8
MORRELL, R. S.: Chemistry of Paints and Varnishes, 497
MYHILL, A. R.: A Note on Permanganate Titrations, 151
POOLBY, J. H.: Solvent Extraction for Vegetable Oils, 724
POPE, Sir W. J.: The Case for Chemical Warfare, 526
POWELL, E. C.: Wood Distillation as a National Industry, 552
POCTEM, H. R.: Colloid Chemistry of Tanning, 94
RHODES, J. E. Wynfield Manufacture of Naphthol Yellow S, 16
RIDEAL, E. K.:
Application of Catalysis to Industrial Chemistry, 217, 245, 277
Development of an Oil By-Product Industry 666
ROGERS, A.: Training Foremen for Chemical Industries, 70
SCHIDROWITZ, P.: Recent Progress in Rubber Chemistry and Technology, 272, 298, 326, 354, 390
SPURGE, G.: Bismuth in High-Grade Ores, 584
WESTON, F. E.: Colloidal Clay and the Hydrolysis of Oils and Fats, 604, 638
MIDLAKER, H. C.: Application of Electrical Power to Modern Handling Plants, 38

WOOLCOCK, W. I. U.: The Passing of the Dyestuffs Bill, 7 WYLD, W.:

the Dyestum Benn,
WYLD, W.:
Distillation of Ammoniacal Liquor
and the Manufacture of Liquid
Ammonia 388
Ammonia Oddation for SulphuricAcid, Plants 150,
ZIMMER, G. F.: The Storage and
Handling of Potash, 34

Birkbeck College: New Lecturer in Physics, 46 Bismuth in High-Grade Ores G. Spurge 584

S84
Borax Deposits in U.S.A., Discovery of 588
British Industries Fair: London and Birmingham Sections, 248; Glasgow Section, 282
British Leather Manufacturers' Research Association: New Director of Research, 130

130
British Non-Ferrous Metals Research
Association, 476
British Oil and Cake Mills: Appointment
of J. L. Behrend, 130
Bronze Propellers, Erosion of, 191
Brunner, Mond Litigation, 223

Cain, Dr. J. C.: An Appreciation, 214 Capillarity, Studies in, 218 Carbonisation, Smith Continuous System,

44 yas in Industrial Chemistry: E. K. Rideal, 217, 245, 277Cement, Caiclum Sulphate, 399, 422
Centrifuses, The Driving of: F. J. Broadbent, 183
Ceramics, Chemical: J.W. Mellor, 98
Chemical Engineering Group, 249, 643
Chemical Industry Club, 253, 369, 555
Chemical Industry in Poland, 380
Chemical Mahufacturers Luncheon to Lord Moulton, 216
Chemical Society: Anniversary Dinner 370

Chemical Society: Anniversary Dinner 370
Chemistry in the 19th Century: Sir William Tilden, 682
Chemistry, Institute of, 281, 531
Chemical Society General Meeting, 398
Chemical Warfare, The Case for: Sir W. J. Pope, 526, 559
Chemical Works, Regulations for, 13
Chemistry in Oxford, Early: C. T. Kingrett, 529
Chemist: Exhibition in London, 731
Chemistry Exhibition in London, 731
Chemistry, Salaries of, 617
Coal Handling in the Power House, 66
Coal Tar Products, 278
Coals, Identification and Valuation of, 159
Cold Storage, The Scientific Principles of, Codd Chemistry, Carlot Chemistry, Carlot Chemistry, Codd Chemistry, Carlot Chemistry,

Colid Chemistry of Tanning: H. R. Procter, 94
Colloid Films, Physical Properties, 76
Colloids Iday and the Hydrolysis of Olis and Fats: F. E. Weston, 604, 638
Colloids, 99
Combination, Chemical, 730

# Commercial Intelligence

Ommercial Intelligence—
Aniline Dye and Chemical Co. Winding
Up Order, 373
A. & O. Syndicate, Ltd., Creditors' Meeting, 224
Bonaventura, Felice & Co., Public
Examination, 140; Discharge Suspended, 650
Bolus, W. & Co., Creditors' Meeting,
309 Bolus, 309

309 Cesson Chemical Co., Ltd., Creditors' Meeting, 536
Chemical Engineering Corporation, Ltd., Creditors' Meeting, 334
Diamant, S., Public Examination, 673, 739

# Commercial Intelligence-contd-

Commercial Intelligence—contd.

Dulac, Ltd.: Creditors' Meeting, 409
Everitt, Walter, Ltd.: iCreditors' Meeting, 649
Groth, L. A.: Creditors' Meeting, 24
Hollac 18
Hill Brothers (London), Ltd.: Creditors' Meeting, 29
Hill Brothers (London), Ltd.: Creditors' Meetings, 201, 336: Statement of Affairs, 650
Hurk, van den, A.: Creditors' Meeting, 382
Keats, Philip: Trustee's decision reversed, 478
Lysle Export and Import Co., Ltd.: Creditors' Meeting, 56
Mann & Cook: Receiving Order, 282: Creditors' Meeting, 303
Massey & Winbury, Ltd.: Creditors' Meeting, 423
Mersey Chemical Works, Ltd.: Sale of Letters Patent, 484
Modern, Richard: Public Examination, 101
Toilet Supply Co.: Suspension of Dis-

101
Toilet Supply Co.: Suspension of Discharge, 673
Tyne Chemical Produce Co., Ltd.: Compulsory Winding Up, 511
Watt, James & Son, Ltd.: Creditors' Meeting, 101
Wilkle & Leek: Order of Discharge, 518

fiskemann, H. O.: Creditors' Meetings, 371, 647: Public Examination, 673 Coung, Frank: Public Examination,

# Concrete, Re-inforced, 127 Core Sands, Some Experience with, 556

# Correspondence-

Bonus Shares and Super Tax, 693
Books, Technical for Russia, 166
Bottle, Round A., 215
British Association, 214
British Chamber of Commerce, 504
British Chemical Trade with Canada, 328, 471
Case for Chemical Trade with Canada, 328, 471
Case for Chemical Trade, 594
Condition of British Trade, 594
Conjoint Board of Scientific Societies, 444
Employers' Insurance, 693
Ethylation by Ethyl Chloride, 71
Fertilising Value of Magnesium Salts, 420
Flotative Reagents, 421
Jerusalem University Library, 504
Key Industries Bill, 444
Laboratory Balances, 153
"Laundroa." 153
Muriate or Sulphate of Potash, 302, 356
419
Jeatent Law Lecture, 444

419
Patent Law Lecture, 444
Petrol Report, 215
Pooling of Dye-Trade Interests, 355
Saccharin on its Trial, 187
Scientific Glassware, 641
Septic Gas from Sewage, 471
Swiss Dyestuffs, 274
Synthesis of Ammonia: Claude Process, 308
Synthetic Resins and Varnishes, 557
Two Hopeful Signs, 98

Corrosion of Boilers, 364 Cupola Practice, Some Experiences of, 307

Discharge of Material in Bulk from Railway Wagons: H. Blyth, 41
Distillation Columns, Fractional, 252
Distillation, Fractional, with Contact Ring Still, 532
Diseases of Occupation, 126
Dye and Chemical Production, Swiss, 160
and Glass Industries, Future of, 201
Industry Developments, 368
Trade in the Netherlands, 158
Dyeing, Fur, Notes on, 247
of Pulp and Paper, 190
Quality of Water in, 117

Dyers and Colourists, Society of, 190, 159, 247, 506

Dyers and Colourists, Society of, 190, 159, 247, 506

DYESTUFFS Act; Advisory Committee, 225 and National Security, 190

Bill, The Passing of the: W. J. U. Woolcock, 7

Export of British, 670

Factories, Prevention of Fires and Explosives in, 721
(Import Regulation) Act, 1920, 45
Industry, British, 120
Intermediates, 306, 422
Legislation Criticised, 448
Naphthol Yellow S. The Manufacture of: J. E. W. Rhodes, 16

EDUCATION: Cambridge University, New Professor of Biochemistry, 508
Cass. Sir John, Technical Institute, 219, 334.
Commercial Conference, 700
Glasgow Chariber of Commerce:
Mr. S. A. MacCallum's Appointment, 285.
Manchester Municipal College of Technology: New Director, 368
Manchester University: Appointment of Dr. F. C. Thompson, 373
Oxford University: Appointment of Mr. A. G. Lobley, 512
Research at the Universities, 392
Electrical Measurement in Chemical Processes, 242
Electrical Fower to Modern Handling Plant, Application of: H. C. Widlake, 38

38

Electrostatic Precipitation Applied to Blast Furnace Gases: H. J. Bush, 116
Evaporation and Concentration, 476, 502
Evaporation and Concentration, 476, 502
ENGINERRING, Chemical, Industrial Importance of, 249
Chemical, Povelopments in, 121
Chemical, Notes on, 222
in Chemical, Works: C. E. S. Place, 156

in Chemical Works: C. E. S. Place, 156 and Chemical Society, Hull, 307, 328 Group, Chemical, 249, 643 Explocives Branch, Research Dept., Woolwich, New Government Chemist, 162

Explosives Combine, Inquiry into, 731
Explosives Supply (1915-1918), Technical
Records, 472

Factories, Chemical, German, British Mission to, 468 Faraday Society, 22, 160, 218, 396, 586,

Faraday Society, 22, 160, 218, 396, 586, 670

Fat Hardening Industry in Switzerland, 160

Fats, Edible, Rancidity in, 252

Fats, Edible, Rancidity in, 252

Fats, Lawrer, Combine, A, 335

and Feeding Stuffs Act, 223

Imports, Japan's, 369

Manufacture of, 369

Muridte and Sulphate as a, 697

Manufacture of, 369

Muridte and Sulphate of Potash, 251

Fine Chemical Industry, Claims of the, 396

Fine Chemical Industry, Frotection of, 473

Fire - Chemical, Laboratory Glass and Porcelain Industries, 531

Fires and Explosions in Dyestuff Factories, Frevention of, 721

Foundrymen, Institution of British, 69, 191, 307, 556

Prevention of, 721
Foundrymen, Institution of British, 69, 191, 307, 556
Foundry Problems, 556
Foundry Problems, 556
Foundry Problems, 556
Foundry Problems, 556
French Chemical Society: Sir W. J.
Fope's Appointment, 274
Fuel Cell, The Froblem of, 586
Fuel, Low Temperature Carbonisation of, 445
Fuel, The Economic Use of: D, Brownlie, 125, 156

Gas Producer, Experiments with: J. H. Paterson, 308
Gas, Mustard 533
German Chemical Industry: Official Review, 152
Glass, Lamp Working, Clouding of, 398
Glass Technology, Society of, 398, 476, 729
Glassware, Scientific, Teating of, 587
Glucose, Electrelytic Reduction of, 396
Glycerine, Further Tests for, 157
Glycxaline Ring, Substitution in the, 511
Gretna, The Passing of, 727

Helium, The Romance of, 356 Hydro Extractors and Centrifuges, 122 "Hyzone," Technical Applications of, 240

Indigotin, The Estimation of, 247 Industrial Chemists, National Association of, 74, 190, 422 Industry, Efficiency in, 223 Invention in 1920, 9

### Ohituary-

Key Industries Bill, Financial Resolu-tions, 393
Bill and the British Fine Chemical Industry: P. C. C. Isherwood, 119 Safeguarding of British, 300, 554 The Future of Our, 210

ĸ

Lard and Lard Substitutes, Factors In-fluencing the Food Value of, 337 Lead and Antimony Industries on Tyne-side, 99

# Legal Intelligence-

Acetylene Cerporation of Great Britain,
Ltd., v Canada Carbide Co., Ltd., 291,
309, 335
Adamson. J., v South Wales Manuisoturing Co., Ltd., 101
Adolph (Wm.) & Co., Ltd., v The Keene
Co., 538
Aktiengeslischaft für Anllin Fabrikation in Berlin and the Mersey Chemical
Works, v Levinstein, Ltd., 279, 317,
S61
Aktiengeselischaft für Autorene Alv.

tion in Berlin and the Mersey Chemical
Works, v Levinstein, Ltd., 279, 317,
561
Works, v Levinstein, Ltd., 279, 317,
561
Aktiengesellschaft für Autogene Aluminium Co., Ltd., 398
Barnes (W.) & Co. (London), Ltd., v.
Wallington & Co., 262
Batt (John) & Co., Ltd., v. Anilin Dye
and Chemical Co., 448
Bourgeois v. R. W. Greeff & Co., 557
Bradford Dyers' Association, Calico
Printers' Association and others v.
The Bayer Co., Ltd., The Badische
Co., Ltd., and others, 100, 129, 160
Brownile (J.) & Co., (Hull), Ltd., v.
Coppee (J.) and others, v. Blagden,
Waugh & Co., 255
Cowan Bros., Ltd., v. London House and
H. Wiskemann, 672
Field (C. W.), Ltd., v. Keene Co., 475
Harrison (H.) v. R. E. Pemberton, 685
Jones (T. H.), E. O. Roberts, R. O.
and crist and others, v. T. W. Ranson
and crist and others, v. T. W. Ranson
and Charles (C.), Ltd., v. Sturtevant
Engineering Co., Ltd., v. Cormandy,
334
Sage (Chas.) & Co., V. W. & J. George,
Ltd., and others, 127
Nance (C. W.) v. Dr. W. R. Ormandy,
334
Sage (Chas.) & Co., Ltd., v. Team By-

334
Page (Chas.) & Co., Ltd., v. Team By-Product Coke Co., Ltd., 335
Phillips (Godfrey) & Bros. v. Charles W. Smallbone, 225
Rushton (Peter) & Co., v. Charles Weiss & Co., 199
Smith v. Meggeson & Co., Ltd., 74

Lubrication and Lubricators, 280, 329

Major & Co., New Technical Director, 538
Materials of Construction Used in a Chemical Works: G. B. Jones, 394, 416
Mauve, Tinctorial Value of, 506
Mechanical Handling, 32
Merchant, Importance of the, 77
Mercury, A Quick Volumetric Method for the Estimation of, 252
Metals, Casting of, 529
Metals, Institute of, 282, 317, 529, 616
Mills, Crinding, 221
Motor Spirit, Manufacture of, by "Crack ing." Process, 578
Moulton, Lord, Luncheon to, 216

### N

National Alloys: Mr. C. F. Goodwood's, Appointment, 453 Newcastle Chemical Industry Club: Annual Dinner, 370 Nitrate Railways Co., Ltd.: A. W. Bolden's Appointment. 18 Nitrate Situation, 75, 619 Nitra Cake, Methods for the Recovery of, 534 Nitrogen Industry in 1920: E. B. Maxted, 8

# Norway, Chemical Industries of, 278

# 0

Ashton, Sir Ralph, 162
Blichfeldt, S. H., 424
Blichfeldt, S. H., 424
Blount, B., 563
Bourquelot. E., 162
Brown, D. R., 79
Brown, D. R., 79
Brown, W., 470
Cain, Dr. I. C., 151
Cameron, Sir Charles A., 283
Chrystal, W. J., 512
Clifton, R. B., 244
Dreyfus, Dr. L. A., 339
Cray, G., 283
Haldane, F., 480
Hardman, W., 135
Hiddine, F., 480
Hardman, W., 135
Hind, T. F., 453
Hollings, P. D., 623
Jackson, W. 79
Leitch, J. W., 453, 607
Macarthur, John S., 431
Miall, J. M., 244
Money, J. C., 79
Moulton, Lord, 301
Odling, Professor W., 251
Reinold, A. W., 480
Suschsland, R., 226
Vasey, S. A., 79
Verdin, J., 102
Wood, J. B., 538
Walsh, P. H., 310
Waters, W., 162
Whitehead, H., 339
Wilkie, Capt. J., 102
Wood, J. B., 538
On and Colour Chemists' As

OIL and Colour Chemists' Association:
97, 221, 336, 474, 649, 729
Bearing Products, Treatment of,
614
By-Product Industry, Development
of: E. K. Rideal, 666
Firing, Recent Experiments in, 729
Fuel, New, Notes on, 606
Linseed, Substitutes for: P. J. Fryer,
496

Fuel, New, Notes on, 6005
Linseed, Substitutes for: P. J. Fryer,
496
Seed Extraction, 328
Oits and Fats, Bleaching of, 696
Industrial Uses of, 608
Lubricating, Carbonisation of: F.
H. Garner, 96
Pure Hydrogen, 5c5
Vegetable, Manufacture of Food
Products from: H. Tefft, 610
Vegetable: Solvent Extraction: H.
J. Pooley, 724
Ozone and "Hyzone" and Their Technical Applications, 240

Paint and Varnish Exhibition, 502
Paints and Varnishes, Chemistry of: R.S.
Morrell, 497
Patent Law and Chemical Research, 189,
220, 246, 276
Patent Law, Position of Employer and
Scientific Worker in Relation to: H. E.
Potts, 476
Patent Laws, Proposed Empire, 395

# Patent Specifications

Acetaldehyde and Acetic Acid, 342 Acetaldehyde, Manufacture of, 286 Acetic Acid, Apparatus for the Manufacture of, 20 Acetic Acid, Manufacture of, 20, 48, 229 Acetylene, 342 Acid Sodium Pyrophosphate, Manu-Acetic Acid, Manufacture of, 20, 48, 229-Acetylens, 342
Acid Sodium, Pyrophosphate, Manu-facture of, 566
Aldehyde and Acetic Acid, 195
Alkali and Alkaline Earth Cyanides, 376
Alkali and Alkaline Earth Sulphides,
542
Alkali Pentaborates Direct from Boron
Ores, Process for Preparation of, 375
Alumina and its Salts from Clay,
Process for the Extraction of, 566
Aluminium Extracting, 626
Aluminium Choride, 626
Aluminium Hydroxide, Process for
the Production of, 653
Aluminous Compounds, Manufacture
of, 591 Aluminum Hydroxide, Process for the Production of, 653
Aluminous Compounds, Manufacture of, 591
Alunite Ore, Utilisation of, 312
Aminophenol Derivatives, 286
Ammonia, 314, 455, 627, 655
Ammonia from Gases, 653
Ammonia from Gases, 653
Ammonia, Method and Means for Use in the Manufacture of, 565
Ammonia, Production of, 104
Ammonia, Production of, 104
Ammonia, Synthetic, 377, 515
Ammonia, Synthetic, 377, 515
Ammonium Chloride, 567, 654
Ammonium Salts, 702
Ammonium Sulphate, 342
Anthraquinone, 342
Anthraquinone, 342
Anthraquinone, 342
Anthraquinone, 342
Anthraduinone and its Derivatives, 376
Argentiferous Lead-Zinc Sulphide Ores,
Artificial Fertilisers, 702
Arylsulphonyl and Arylenedisulphonyl
Derivatives of 1: 4-Naphthylenediamine and its Sulphonic Acids,
Manufacture of, 540
Asphalt from Petroleum or the like,
Production of, 736
Assimilable Phosphates, 540
Aurothiosalicylic Acid, 404
Barium Chloride, 456

Barium Chloride, 456
Benzol, Recovering from Wash-Olis, 455
Bituminous Coal, Brown Coal and Shale,
Process and Apparatus for Distilling
by Superheated Steam, 403
Borneol, 483
Borneol, 483
Borneol, 486
Brown Coal and Peat, 456
By-Product Condensers, 456

Calcined Ore and the like, Pre-Leaching
Apparatus for Use in the Treatment of, 566
Calcining Furnaces, 49
Calcium Carbide, 542
Calcium Carbide, 542
Camphyl Carbinol, 404
Caputchour, Process for the Vulcanisation of, 653
Carbonacevus Material, Apparatus for

Camphyl Carbinol, 404
Caoutchour, Process for the Vulcanisation of, 653
Carbonaceous Material, Apparatus for Distilling, 313
Carbonaceous Material, Apparatus for Treating for the Recovery of Volatile Hydrocarbon Constituents, 48
Carbonaceous Materials, Apparatus for 7.7
Carbonaceous Materials, Apparatus for 7.7
Carbonaceous Materials, Apparatus for, 7.7
Carbonaceous Materials, Apparatus for, 7.7
Carbonaceous Materials, Apparatus for, 7.7
Catalytic Iron or Catalytas Containing Catalytic Iron or Catalytic Containing Catalytic Iron or Catalytic Ton or Catalytic Iron or Catalytic Containing Catalytic Reactions, Controlling, 82
Collulod Products, 482
Cellulode Products, 482
Cellulose Butyrates, 675
Coment Materials, Magnesite and the like, Method of Burning or Calcining, and Apparatus therefor, 427
Centrifugal Machine, 258
Centrifugal Reactions, Facilitating by Radiations, 165
Chlorinated Hydrocarbons, 314
Chiortoluenes, 567
Coagulating Rubber Latex, 457
Coagulating Rubber Lat

### Patent Specifications-continued.

Patent Specifications—continued.

Coal Tar, Process of Treating, 312
Coal, Treatment of, 314
Coal, Treatment of, 314
Coal, Treatment of Materials Containing, 403
Coloid Powders, etc., 342
Colouring Matters, Production of, 677
Concentrating Ores, 195
Condensation of Phenolic Bodies with Adehyolic Compounds, 483
Continuous Hydrogenation of Unsaturated Oils, Fats and the like, Process Continuous Production of Solid and Gaseous Fuel with By-Product Recovery, Process and Plant for, 653
Conversion of Fatty Acids, or Oils, containing Free Fatty Acids, into Glycerides, Process, 735
Conversion of Fatty Acids, or Oils containing Free Fatty Acids, into Glycerides, Process, 735
Conversion Hydrocarbons into Hydrocarbons of Lower Boiling Point, 540
Coxing Retort Ovens, 104
Coxing Retort Ovens, 105
C

Cyanides and Cyanamides, 196

Decolorising Charcoal, Process for the Preparation of, 625
Destructive Distillation, 49
Destructive Distillation of Oil-Bearing Material in situ, Heating Means for Use in, 133
Di-Alkyl Amino Ethyl Derivatives of Theobromine, Preparation of, 133
Diazo Colouring Matters, Manufacture and Production of, 104
Dichlorecthylene, 313
Di-Ethyl Sulphate, Preparation and Manufacture of, 258
Dinitrophenol, 106
Diolefines and their Halogen Derivatives, 314
Diolefines and their Halogen Derivatives, 313
Diols and Diolefines, 342
Dioxydiethyl Sulphide, Esters of, 196
Dispersoids, 313
Distillation Furnaces, 455
Distillation frances, 455
Distillation frances, 452
Distillation of Coal Tar, Blast Furnace
Tars and Treatment of the Residual
Pitches, 703
Distillation of Cracking of Hydro-

Pitches, 703
Distillation or Cracking of HydroCarbon Cis. 705
Distillation of Cracking of HydroLating Company of Company
Distilling Coal Tar, &c., 541
Distilling Hydrocarbons, Alcohols, &c.,
195.

Distilling Materials of High-Boiling Point, 456 Dyes, 377

Effecting Chemical Reactions, 515
Electrolysis, 48, 456
Electrolytic Apparatus, 105
Electrolytic Cells, 81
Electrolytic Gas Cenerators, 285
Emulsions and the like, Treatment of, 257

257
Ethyl Alcohol, 404, 541
Evaporating Liquids, 566
Evaporating or Condensing Solutions,
Emulsions and Suspensions, and the
Production of Chemical Reactions,
Method of and Apparatus for, 677
Evaporating Processes, 49
Extraction of Metals from Solutions or
Separation of Metals, Process for, 677

Fats, &c.: Purifying, 427
Fatty Acids, 342, 377
Fatty Acids by Hydrogenation of Oils, 287
Fat, Wax, Oil Gelatine and the like, Process and Apparatus for the Extraction of—from material contain-

132. Strain Llouids, 377
Filtering Llouids, 377
Filtering Llouids, 377
Filtering Llouids, 3625
Formaldehyde; Methyl Alcohol, 342, 404
Froth-Flotation Process, Apparatus for, 104
Froth-Flotation Process, Apparatus for, 204
Funds Carole Petroleum Oil or Residues thereof by Distillation.
Manufacture of, 375
Furnace Arches, 286

Soda Compounds, Trade in 1920, U.S.A., 620
Soll, Physico-Chemical Problems Relating to the, 670
Solvent, A New American, 449
Spectroscope in Science and Industry:
S. J. Lewis, 475, 510
Synthesis, Electro, 509
Synthesis, Electro, 509
Synthesic Drug Industry, 619

T

Technology, Makers of Modern, 726
Training Foremen for Chemical Industries:
A. Rogers, 70
TRADE, A Retrospect in 1920, 4.
Award, Chemical, 75, 129
British Overseas, 155

Chemical, Position of the, 119
Development of, 119, 124
Marks, Chemical, 74, 399
Of England, Chemical Industry, 362
in 1920, Cpemical, 10
Returns 76, 187, 309, 480, 561, 688
Scientific, Technical and Commercial
Travellers, 365
Traders, Chemical and Dyestuffs, 6, 74,
88, 161, 693

U.S.A. Chemical Control Bill, 698 United States Bureau of Mines: New Director, 223

Varnishes, Insulating, Some Notes on: A. R. Matthis, 501 Varnishes, Preparation and Use of: P. R. Koekkoek, 499 Vitamins in Food Substances, 690

Warfare, Chemical, 225
Water, Colour in, 338
Water, Boiler Feed, Degassing and Purification'o! P. Kestner, 304
Wood Distillation as a National Industry:
E. C. Powell, 552
Works Management, Common Sense in, 718.

Zirconia from Brazilian Ore, 155

# Patent Specifications-continued.

Furnaces, 82
Furnaces for Subjecting Orea, or other
Materials, to the Action of Gases and
the like, 426
Fusions with Molten Caurtic Soda or
Caustic Potash, Method of
Conducting, 194

Gases and Vapours, Separating, 376
Gaseous Reactions Under Pressure, 404
Gas-making Retorts, 81
Gas Manufacture, 567
Gas Producers, 132, 736
Gas Producers, Valves for, 341
Gas Purifiers, 702
Gas, Retort Furnace for Use in Making, 165

Gas Puriners, 702
Gas, Retort Furnace for Use in Making, 165
Gas Washer and Purifier, 164
Gas Washing Apparatus, 20
Glyoxal, 427
Grieding, Crushing, 133, 703
Grinding, Crushing or Disintegrating, 702

Halogen Hydrocarbons, 404
Heat Treatment or Evaporation of
Liquids, Process of and Apparatus for,
257

Heavy Oils, Treatment of, 194
Hexamethylenetetramine, 314
Hydrobromic Acid, Process for the
Manufacture of—from Bromine and
Hydrogen, 21
Hydrocarbons, Catalytic Oxidation of,
342
Hydrocarbon Oils, Cracking, 482

342
Hydrocarbon Oils, Cracking, 482
Hydrocarbons, 627
Hydrocarbons, 627
Hydrocarbons, Extraction from Coal, 314
Hydrocarbons, Adv. 657

Hydrochloric Acid, 567

snydrocnioric Acid, 567 Hydrogen, 105 Hydrogenating Oils, 404 Hydrogen Sulphide from Sulphurous Gases, Process for the Production of, 312

Hydrogenation of Oils, Fats and the like, Method of Maintaining the Activity of Metallic Catalysts in, 653 Hydroxyazo Dyes, 540

Illumination and other Gases, Purifica-tion of, 455
India-Rubber Substitutes, 165, 342
India-Rubber Synthetic, 313
Indiarubber, Vicianising, 133
Indiarubber, Vicianising, 133
Indiarubber, Vicianising, 131
Iron and Tin from Tin Scrap, Method of obtaining, 591
Iron from Iron Ore, Process for Manufacture of, 736
Iron Ores Containing Nickel, Treating, 230
Iron, Steel and Certain Other Metals,

230
[ron, Steel and Certain Other Metals, Method or Process for Coating with Aluminium, 285
[ron, Titanium and Vanadium, Treatment of Minerals or Products Containing, 426

Leaching Apparatus, 654
Lead and Silver Ores, 22
Lead and Zinc, Treatment of Sulphate
Ores Containing, 49
Lead Sulphate Direct from Lead Sulphide Ores, Process of Making, 258
Lead Sulphate, Process for Making, 154

Lead Sulphate, Process for Making, 164
Lead, Zinc and Copper Ores, Treating, 286
Lime, Apparatus for the Hydration of, and for similar Purposes, 515
Liquid Sulphurous Acid from Dilute Sulphurous Acid Gas, Process and Apparatus for the Manufacture of, 403

403
Liquids and Gases, Apparatus to Bringing into Intimate Contact, 626
Liquids, Treating with Gases, 165
Low Temperature Carbonisation, 405
Lubricating Oils, 195, 341

Audricating Oils, 195, 341

Magnesia, Electric Furnaces for Calcining and for similar Purposes, 482

Magnesium Chloride, 654

Magnetic or Weakly Magnetic Iron Ore
Containing Magnetic Forrous Sulphide as a Secondary Constituent,
Process and Apparatus for treating,
403

Magnetic Procession, 240

Morcury Recovering, 342
Metal-Bearing Ores or Other Metal-Bearing Materials, Treatment ofand the Recovery of Valuable or
Desired Constituents, 229
Metallic Salts,
Metallic Tungsten Powder Direct from
Sodium and Potassium Tungstates,
132
Metalne, 703

Methane, 703
Methyl Alcohol, 567
Methyl Alcohol, 567
Mineral Classifying and Concentrating
Apparatus, Construction of Trommel
for, 403
Mineral Oils, Tar, Resins, &c., Distilling, 376
Mineral Residues, Process for the Conglomeration of, in a Pulverulant ConMineral Tar, other than Coal Tar,
Process of Treating, 427

# Patent Specifications-continued.

Naphthylamine Sulphonic Acids, Manufacture of, 592
Nickel-Copper Matte, Treating, 541
Nickel Salt, Method for Electrolysing a Solution of, 21
Nitric Acid, 404
Nitro Compounds, Nitroso and Azo Compounds, Reduction, Nitrogen, Electrodes for Oxidising, 426
Nitrogen, Electrodes for Fixation of, 342
Nitrogen, Electrodes for Fixation of, 342
Nitrogen, Method and Apparatus for the Fixation of Atmospheric, 20
Nitrous Gases, 404

Nitrous Gases, 404
Oil from Oleiferous Sandstone, Shale or the Like, Apparatus for the Extraction of, 455
Oils and Fats, Method of Refining, 81
Oils and Fats, Method of Refining, 81
Oils and Fats, Method of Refining, 81
Ore Separating Devices, 341
Ores and Other Materials, Leaching and other Treatment of, 312
Ores and the Like, Treatment of, by Flotation, 375
Organic Reactions at HighTemperatures, 105
Oxalates and Oxalic Acid, 626
Oxide of Aluminium from Chloride of Aluminium, Process of Producing, 375
Oxyaldehydes, 456, 626

375
Oxyaldehydes, 456, 626
Oxyaldehydes, and their Derivatives,
Process for Manufacture of, 592
Oxygen and Nitrogen, Separating, 49
Oxygen Compounds of Sulphur, Apparatus for the Manufacture of, 569

Para-Cymene, 194
Parafin Wax, 377
Parafin Wax and Lubricating Oils from
Tars, 377
Paat. Brown Coal, or the like, Method of
Treating, and Apparatus therefor, 81
Peat, Treatment of, 164
Perborates and Perphosphates, 377
Petroleum and Analogous Distillates,
Process of Cleaning and Refining,
565
Petroleum or the like, Treatment of

Petroleum or the like, Treatment of,

Raw Rubber, Treatment of when Freshly Coagulated from the Later.

Reactive Acid Liquor, Alcohols, Esters and the like from Olefine Hydro-carbons, Process for the Production of, 482

carbons, Process for the Production of, 482.

Recovering Hydrochloric Acid in Glucose Manufacture, 165.

Recovery of Oil from Substances such as Bitumen and Shale in situ, 653.

Refining Oil or the like by Distillation, 702.

Refractory Materials for Furnace Linings, Manufacture of, 194.

Resins, Synthetic, 377.

Removal of Sulphur from Gases, 654.

Retorts for the Distillation of Carbonaccous Substances, 591.

Roasting and Sintering Ores and the like, 514.

Roasting Furnaces, 82.

Rotary Furnaces, 228.

Rotary Furnaces, 238.

Rotary Furnaces, 248.

Rotary Furnaces, 2

Saturators, 404

Saturators, 404
Saponaceous Compositions, 540
Salts, Means for Drying, 229
Saccharifying Wood, 626
Separating a Volatile Liquid from Solution in a Relatively Non Volatile Liquid Apparatus for, 105

# Patent Specifications-continued.

Separating Suspended Matter from Liquids, Process and Apparatus for, 653 econdary Butyl Acohol, Manufacture of, 591

Secondary Butyl Acohol, Manufacture of, 591
Separating Aqueous and Other Vapours from Liquids and Solids and Preparing Dilute Sulphuric Acid, 375
Separating Materials, 258
Shale, Method of Treating, 194
Silica and like Cels, 566
Sodium Bicarbonate and Hydrogen, 515
Soap Powders having a High Percentage of Liquid Fats and Oils, Process for Producing, 164
Sodium Pentaborate and Boric Acid, 105
Strontium and Barium-Sulphates from their Native Sulphates, Method of Obtaining, 591
Stills, 625
Sulphur Dioxide, 679
Sulphare of Ammonia, Manufacture of, and Apparatus therofor, 20
Sulphur, 106
Sulphur, 106
Sulphur, 106
Sulphur, Purification of, 133
Sulphuric Acid Chambers, 541
Sulphuric Acid, Manufacture of, 194, Synthetic Ammonia, 286
Synthetic Ammonia, 286
Synthetic Fats, 627
Synthetic Fats, 627
Synthetic Fats, 627
Synthetic Fats, 627
Synthetic Resins, 342, 377, 541, 566
Synthetic Tanning Agents, 165, 456, 483
Tar Distilling, 515

Synthetic Resins, 342, 377, 341, 566
Synthetic Tanning Agents, 165, 456, 483
Tar Oils, etc., Purifying, 483
Tar Oils, etc., Purifying, 483
Tar Oils, Resins, Mineral Oils, etc., Distilling, 342
Tar, Process for Removing from the Products of the Distillation of Wood, Coal and the like, 375
Terpineol, 133
Terpine J. 133
Terpin Hydrate, 133
Thiophene Derivatives, 230, 258
Thorium Compounds, Manufacture of Insoluble, 228
Tin and Antimony Compounds, 457
Tin, Purification of, or Production of Tin Satis from Crude Tin, 427
Tin, Winning of, 375
Treating Ores, 678
Treating Ores, 678
Treating Foor Iron Ore containing Weakly Magnetic or Non-Magnetic Oxygen Compounds of Iron, Process and Apparatus for, 677
Treating Solid Substances Capable of Reaction with a Gaseous Reagent, Process of, 540
Tropine Derivatives, 134
Tunnel Furnaces, Klins, Ovens and the like, 257
Tunnel Klins or Furnaces, 81
Urea, 133

Urea 133 Urea or Ammonia from Cyanamide, Production of, 540

Production of, 540

Vanadium from its Ores, Method of Recovering, 258

Vertical Gas Retorts and the like Machines for Charging, 194

Vinyl Compounds, 314

Vinyl Haildes, Esters and Polymerisation Products, 313

Vulcanizing Rubber; Process for Devulcanising, 455

Vulcanized Rubber Goods and Materials containing Substances which are adversely Affected by Certain Vulcanising Processes, Process for Obtaining, 514

Washing and Classifyting Ores and Other

Obtaining, 514
Washing and Classifying Ores and Other
Materials, Apparatus for, 21
Water, Process for the Softening or
Purification of, 34!
Waterproofing Compositions, 287
White Lead, Apparatus for the Manufacture of, 483
White Lead, Manufacture of Acid Potsto be Employed in the Production of, 104
Wood or other Substances containing Cellulose, Process for the Treatment of—For the purpose of obtaining Cellulose and artificial Resin. Ashphalt Lac and the like, 514
Zinc Manufacture, 258

phatr Lac and the like, 314
Zinc Manufacture, 258
Zinc, Obtaining by Electrolysis, 287
Zinc Solutions, Purification, 625
Zinc Treating, 105
Zinc White, 456
Zirconlum, 230

Patents, U.S., 704
Permanganate Titrations, Note on: A. R.
Myhill, 151 Myhill, 151
Petroleum Supplies. The World's, 446
Phosphate Rock in South Pacific, 570
Photography, Colour, 252
Pigments, White, Evaluation of, 97
Plant and Machinery, Economical Upkeep
of: C. W Brett, 719
Plant, for Purification of Waste Water:
J. A. Resvell, 250
Potash, Mines, French, Visit to, 584
Potash, Mines, French, Visit to, 584
Potash, Minester of Sulphate of, 251 Potash, Storage and Handling: C. F. Zimmer, 34 Potash Supplies from Alsace Mines, 418 Preservation of Chemical Works Plant and Structures: G. B. Jones, 494

Reactions, New Technological Applica-tions of Old, 441
Refractometer, Analysis by, 336
Refractometer in Scientific and Technical
Work: P. J. Fryer, 213
Reparation (Recovery) Bill, German, 332, 322, 446, 471, 616
Reparation and Conf., An Industrial, 73
Research Associator, An Industrial, 73

### Reviews-

Analysts' Laboratory Companion [A.E. Johnson], 118
Analysis of Paint Vehicles, Japans and Varnishes [C. D. Holley], 503
Anthracene and Anthraquinone [E. De Barry Barnett], 361
Ammonia and the Nitrides [E. B. Maxted], 361
Annual Report of the Society of Chemical Industry, 582
Bennol: 1st Recovery, Rectification and Uses [S. E. Whitehead] 12
Bibliotheac Chemica Mathematica, [H.Z. & H. C. S.] 695
Chemical Engineering A. Tershook of

Chemical Engineering, A Textbook of, [E. Hart] 118
Chemical Technology and Analysis of Olls, Fats and Waxes, [Lewko\*itsch] 612.
Chemical Year Book 665

Chemists' Year Book, 695
Coal in GreatBritain, [Walcot Gibson] 12
Comparative Therm Tables, [H. R. Askew] 275

Dictionary of Applied Chemistry, [Sir T. E. Thorpe] 694 Drugs in Commerce, [J. Humphrey] 612 Dye Chemistry, Text Book of, 613

Electronic Conception of Valence and the Constitution of Benzene, [H. S. Fry] 612

Fundamental Process of Dye Chemistry, [Dr. H. E. Fierz-David] 275

Handbook of Metallurgy, [Dr. C. Schnabel and H. Louis] 694

India Rubber Goods, Manufacture of, [Factory Manager] 154 Inorganic Chemistry, [E. I. Lewis] 613 Introduction to Qualitative Chemical Analyzis, [T. Wilkelum Fresnuis] 161 Kempes' Engineers' Year Book, 1921, 695

Laboratory Manual of Organic Chemistry, [H. L. Fisher] 583
Lubricating and Allied Oils, [Elliott A. Evans] 154

Organic Chemistry, Textbook of, [A. F. Hollman] 118
Organic Chemistry for University Students, Textbook of, [J. R. Partington] 275

Physiology of Protein Metabolism, [E. P. Carbcart's 583
Public Health Chemical Analysis, [Robert C. Frederick and Aquila Forster] 118

Forster | 118

Rapid Methods for the Chemical Analysis of Special Steels, Steel-making Alloys, Their Ores, and Graphites, [C.M. Johnson] 361

Recent Advances in Organic Chemistry, [A. W. Stewart] 181

Red Lead: How to Use it in Paint, [A. H. Sabin] 503

Relativity and the Electron Theory, [E. Cunningham] 582

Rubber, Resins, Paints and Varnishes, [R. S. Morrell and A. De Weele] 275

Switzbengian, Physical Tables, 695

Switzbengian, Physical Tables, 695

IR. S. Morrell and A. De Waelej 275'
Smithsonian Physical Tables, 695
System of Physical Chemistry, IW. C.
Mc. C. Lewisj 154
Technical Methods of Analysis, [Edited
by R. C. Griffin] 694
Treatise on General and Industrial
Organic Chemistry, [E. Molinari]
181

Varnishes, [Ch. Coiffignier] 503 Volumetric Analysis, [Charles H Hamp-shire] 181

Yeasts, The, [Alexander Guilliermend]

Ropeways, Aerial, 33 Rubber Chemistryand Technology, Recent Progress in: Philip Schidrowitz, 272, 298, 326, 354, 390 Rubber Exhibition, International, 469 Rubber Processes, Plantation, 158

